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THE POLLINATION OF THE DATE PALM

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ONE OF THE OUTSTANDING CHARACTERISTICS of the date palm, *Phoenix dactylifera* Linn., is its dioecious nature, the pollen-bearing and fruit-bearing, or male and female, flowers being borne on separate trees. Among wild palms reproducing from seed, the two sexes are produced in approximately equal numbers, and this abundance of males furnishes a large supply of pollen which, carried by the wind, suffices to pollinate at least enough of the female blossoms to perpetuate the species.

An understanding of this fact was of importance to the first systematic cultivators of the date palm, for by hand-pollination, instead of wind-pollination, they could dispense with all males except three or four for each hundred females, and thus economize on space and labor, while ensuring a better crop.

On the other hand, the separation of the sexes appealed to the religiously-tinged imagination of the primitive mind, and was doubtless one of the factors leading to the veneration with which the palm was regarded by the early dwellers in the Tigris-Euphrates region.

While, therefore, the artificial pollination of the palm has an interest to the student from several points of view, it has often been misunderstood by Occidentals,¹ to whom date-growing is foreign. European dictionaries give but a confused idea of

¹ The first Occidental account I have seen is that of Herodotus, *History*, Bk. I, ch. 193, who describes what he saw in Babylonia but confuses it with the caprifigation of the fig tree. Theophrastus, *Historia Plantarum*, ed. Wimmer, II, p. 6, corrects him, and gives a fair account. Pliny, *Historia Naturalis*, Bk. XIII, ch. 7, seems hazy as to the principles involved.

the rich Arabic vocabulary connected with this subject. The following brief notes will, it is hoped, give an accurate picture of the manner in which the date palm has been pollinated in Muslim countries, so far back as records exist; and will organize in a preliminary way some of the commoner Arabic terms connected with the procedure.²

I. The male palm is called (1) *dakr* in Egypt and the Maghrib: this word is not only classical but is recognizable in some of the earliest cuneiform references. The root كـر applies to a male of any kind, and not merely a palm. In Algeria the only form³ of the singular I ever heard is *dokkār*, although G. Schweinfurth⁴ records *dakr* at Biskra. (2) *faḥl*, in the Orient generally. The root meaning is "to be masculine", and this word also has a wide range of applications, as to a vigorous man, or a strong camel. (3) *'abr*, which is said originally to mean a needle, — the penis being likened to that instrument; or it may be merely a dialectal variant of *'afr* = to dust, hence, to pollinate. (4) *b'al*, a primitive meaning of which is sexual intercourse.⁵ (5) *jūlf*, from a root meaning "to take off the bark"; because, I suppose, the spathe is removed from the male flower before it is used for pollination. (6) *rā'il*, originally meaning pendent, cf. *r'ilah* = prepuce; the root also means "to pierce"; its connection on both accounts with the

² I am much indebted to Père Anastase-Marie de St. Elie, of the Mission des Carmes, Baghdād, for suggestions concerning many of the Arabic terms mentioned.

³ In general, I have not thought it worth while to enumerate the differences in vocalization, and the like, which are on record. The interested reader can get them from such sources as the *Kitāb-al-naḥl* of al-Aṣma'ī, ed. by Aug. Haffner and pub. at Bayrūt, 1907; from the similarly named and better-organized compilation of Ibn Sīdah in the *Kitāb al-Muḥaṣṣaṣ*; or in Lane's Diet.

⁴ *Arabische Pflanzennamen aus Ägypten, Algerien u. Jemen*, von G. Schweinfurth, Berlin, 1912. All of my information regarding the modern Egyptian vocabulary is, unless otherwise noted, derived from this source.

⁵ Another meaning of *b'al* is a palm which is not irrigated. The connection between these two meanings is not apparent to me, unless it be an example of antiphrasis. *B'al* as a god of unirrigated land is a well-known figure. Cf. *ball* = to moisten. This question has been discussed in detail by G. A. Barton, *A Sketch of Semitic Origins*, New York, 1902.

idea of maleness is obvious. (7) *kušš*, ordinarily pronounced *goš*, is the word generally heard around the Persian Gulf, e. g., in 'Omān; in Sindh, however, the male palm is called *mū*. *Kušš* or *ḡušš* is said to be from Pers. *kušš* or *hušhsh*, an angle, as e. g. made by the saw in a board; the insertion of branchlets of the male inflorescence into the female flower being likened to this. In Multan, according to E. Bonavia, the whole bunch of dates is called *goša*. All of the foregoing terms are classical.

II. When they first appear in the spring, the flowers of the female palm (*nahl*) are enclosed in a hard envelope or spathe, which is called (1) *kafūr*, because it *conceals* the flowers. This is probably the most elegant of all the names for the spathe. A dial. var. is *qafūr*. (2) *kimm*, the root meaning of which is "to cover". A parallel is *akamm* or *aqamm*, to impregnate a female camel. A palm with spathes appearing is described as *makmūm*. In the Sahara, according to E. L. Bertherand, the name of the spathe is *quemamine* — which sounds like a plural from this root. (3) *katar*, because, as I suppose, the increase or multiplication, كثر, of the palm comes from the flowers. (4) *qīqā'h*, comparing the spathe to an egg-shell; the word is defined succinctly by Ibn Sīdah as *qīšr al-tālāh*. (5) *ḡuff*, comparable in meaning to (3) above, جف = "to increase". *ḡubb*⁶ may be a dial. var. of this; but cf. also XII, 6, for another correct derivation. (6) *wahī*, although Abū Ḥanīfah says this properly refers not to the spathe itself, but to the flowers within the spathe. ولع = violent love. (7) *ḡurbah*, = a sac. In Assiūt *gerāb*, according to Dr. Schweinfurth. *harabah* is apparently a var. of this, although plausibly connected with *harbah* = a lance. (8) *ḡalāfah*, reported by Dr. Schweinfurth from El-Qorēn, Egypt, has the same meaning as the preceding.⁷ He also reports *kūss ḡilāf* or simply *kūss*, which is perhaps Pers. *kušš*, vide I, 7. (9) *ṭal'*, or some var. of it, as in Egypt.

⁶ A proverb says جِبَابٌ فَلَا تَعَنَّ أَجْرًا: "They are merely *spathes* [and not flowers]; therefore don't waste time pollinating them [for you won't get anything out of them]" — applied to a man who is, as one might say, a "gold brick".

⁷ Brown, T. W., "The Date Palm in Egypt", *Agric. Journal of Egypt*, 5 (1916), p. 75, gives "*relaf* or *gerab*" as the current names for the female spathe.

ṭalh, is sometimes applied to the spathe, but incorrectly, as it properly designates the flowers within the spathe, V, 1, *infra*. This use goes back at least as far as the compilation of the 'Ain, however. (10) *tašo* I have heard only at El Kantara in Algeria; it is evidently from *ṭašā'* = sexual intercourse; cf. *ṭašš* = rain, and see also V. 13. (11) *tara*, a name used around the Persian Gulf, appears to be from Pers. *tar* = humid, because of the fresh viscosity of the flowers inside the spathe, and the tender texture of the spathe itself, while still young. Tara water is a well known perfume in the region mentioned. (12) *girif*, a Baṣrah expression, and *qurrāfah*, the usual term in the Ḥadhramaut,⁸ are doubtless to be connected with *qārif* = sexual intercourse. (13) *dāmiḡah*, = a skull wound disclosing the brain, evidently derives its significance from the somewhat gruesome but not inapt comparison of the splitting spathe revealing the densely crowded mass of flowers inside. (14) *ḡabb*, if not a dial. var. of (5), is easily attached to *ḡab* = conceal.

III. Prior to the opening of the spathe or envelope mentioned in the preceding paragraph, the flowers concealed within it are called (1) *ḡaḡim*, because they are crowded together, *هضم*. (2) *fāliḡ*, erroneously given sometimes as *qāliḡ*, from *falaḡ* = to split open in the middle.

IV. A few days after its protrusion from between the leaf-bases of the palm, the spathe splits open, at which time it is called (1) *ḡaḡk*, as if it were smiling *ضحك*. (2) *dāmiḡah*, see II. 13. (3) *baḡwah* = admirable to behold — but cf. *بغى* = a prostitute, as "exceeding" (sc., that which is proper). (4) *naḡm*, = appearing or breaking forth. (5) *ḡaḡid*, explained by the lexicographers as from *غفر* = fresh or tender, and sometimes written *faḡid* or *faḡis*; but the original form may have been *فضيم* = deflowered (applied to a woman), and the other forms variants of this.

V. When the spathe has split open, the flowers within are finally exposed to view. These flowers, taken collectively as an inflorescence or raceme, technically known as a spadix, are

⁸ Landberg, C., *Études sur les Dialectes de l'Arabie Meridionale*, vol. i, Leyden, 1901.

called (1) *ṭal'*, because they *ascend*; this is probably the most widely current term, both classical and modern, and has variants such as the grossly ignorant *ṭalh* (Egypt) and *tālah* (Persia). (2) *Haṣbah*, = abundance; sometimes spelt with ح, and Lane says the latter is the correct form; if so, it is, I suppose, because the flowers, at first white, quickly become *tinted* on exposure to the air. Abū 'Ubayd supports this by remarking that when the *ṭal'* has become greenish, one says حَضَبَ النخل. (3) *ijrīd* expresses the fact of their whiteness, while (4) *haṣal* applies after they have slightly yellowed. (5) The Pers. *kardō* is perhaps connected with *kard* = a cut branch. (6) *hin'a*, = agreeable or favorable, applies to a bunch of ripe dates as well as to the young flowers. (7) *'ilib* is said by F. E. Crow⁹ to be the prevailing term at al-Baṣrah: if so, I did not happen to hear it there. It would presumably be connected with *'alib* = hard to the touch. (8) *walī'*, see II. 6. (9) *farūh*, in Egypt and the Ḥadhramaut, is likewise unknown to me, but might be linked with *farḥ* = happiness. (10) *subāṭah* is, as the Taġ al-'Arūs correctly observes, an Egyptian dial. name for a bunch of dates, but Dr. Schweinfurth gives it as the current Egyptian name for "weiblicher Blütenstand", and ascribes it also to Biskra, where, however, I never heard it and believe it is not generally accepted. The picture of "flowing hair" called up by the root *sbt* is easily transferred to the many-branched cluster of flowers. Silas C. Mason (*Bull.* 223, U. S. Dept. of Agriculture, p. 22), who gives "sobata" as the name for the stem alone of the spadix, was evidently misinformed. (11) *'urġūn*, the most widely-used name in modern Arabic, means "ascending". It is, however, applied to the stem of the inflorescence (VI. 8, *infra*) as well as to the cluster of flowers as a whole. (12) *qanā* or *qunw*, modern Egyptian *ginū*, = "possession". (13) *ṭuš*, at Baghdād, is doubtless from *ṭušš* (II. 10); it was explained to me as meaning "the young spadix when it turns from white to greenish", after exposure to the air; and also "dates when first formed", i. e. a few weeks after the flowers are pollinated. (14) *šaml* is a purely classical name which refers to the inflorescence as *enveloped* by the spathe.

⁹ In *Kew Bull.* No. 7 (1908), p. 286.

VI. The stem of the spadix or raceme¹⁰ is called (1) *matyaḥah*, = a stick or staff.¹¹ (2) *ʿūd*, = wood. (3) *ḡāriḥah*, = leg, etc. (4) At Biskra, *gunt* (from *qmw*? see V. 12). (5) At al-Baṣrah and in ʿOmān the classical *ʿasqah* is used, from عسق = to attach itself. (6) At Assiūt and Luxor *ḡurbah*, a word unknown to me. (7) *ḡidl*, on the authority of the Qamūs; the word usually applies to the trunk of a tree. (8) *kināz* is given in Richardson's Dictionary as a Persian name for the stem of the cluster. In Arabic, words from this root refer naturally to the idea of storage, e. g., *kanāz* = stored dates. (9) *ʿurḡūn* is a Protean word, which means either (and nowadays most properly) the entire spadix; or else the stem thereof; or in Egypt (*fide* Tag al-ʿArūs) the individual branches or "threads" of the cluster; but the last-named usage must be regarded as "bad language". Muhammad employs the word in the second sense, when in the Yā Sin chapter (36. 39) he describes the moon, waning until it becomes like the old stem of a date spadix,¹² عاد كالعرجون القديم. Despite this authority, the word nowadays probably belongs more to the raceme or bunch as a whole, and *qua* dates, not *qua* flowers. I shall not here

¹⁰ Classically, a palm bearing long-stemmed racemes is (1) *bāʿinah* <*būn*, = an interval or distance between two things; or (2) *ṭarūh*, from *ṭrḥ* = to push away. If the stems are short, the palm is (1) *ḥāḍinah*, a pretty simile likening the palm to a woman bearing a child on her breast; or (2) *kābis*, which presents the picture of the bunch *pressing* on or *invading* the palm; or (3) *ḡatm*, from جثم = to lie on one's chest; although Abū Ḥanifah says the last-mentioned term is not applied until the bunch has attained some size.—The length of stems is mainly a question of variety of palm.

¹¹ See Damiri's *Ḥayat al-Ḥayawān*, tr. Jayakar, 2, p. 764.

¹² At harvest time the ground around a plantation is strewn with these stems, from one to three feet in length and often bright yellow or red in color. The resemblance to the waning moon is obvious enough. The English translators (Sale, Rodwell, Palmer) of the Koran have, however, rendered *ʿurḡūn* in this verse as a "palm branch", entirely missing the idea. Moreover, the palm has no branches, but consists merely of a trunk with a crown of leaves at the top. It may be added that the common expression "palm tree" is likewise inexact: the palm is a palm, *tout simplement*. Arabic usage in designating it merely as the date palm, *al-naḥl*, is therefore in accord with good botanical usage; although for purposes of definition a lexicographer may explain that it is the tree which bears dates, *ṣaḡarah al-tamr*.

go into the extensive synonymy of the bunch of dates, since it surpasses the field of pollination. Finally, *urjūn* is often applied nowadays to the entire male inflorescence. (10) *ihān*, a classical word which I have never heard colloquially; presumably *<hān* = to be despised, etc. — the stem being, after the dates are picked, of little value as compared with leaves, fibre, and other parts of the palm used in home industries.

VII. The base of this stem is more or less farinaceous, and it is sometimes cut, while still young and soft, and eaten. It is called (1) *gummār*, pronounced *gunbar* at Biskra; but this word more correctly applies to the terminal bud¹³ of the palm, which is also eaten if for any reason a palm has to be cut down, and *gummāz*, a variant of the foregoing. (2) In South-Arabia, *kūrzān*, = cheese, according to Th. Bent. (3) *pānir-i-hurmā* (Pers. date cheese). C. Doughty mentions that at Khaybār the terminal bud (*gummār*, *sensu stricto*) was eaten under the name of "Khaybār cheese". (4) *ṭarīdah*, a dictionary word apparently referring to its *distance* from the cluster.

VIII. Following along the stem of the cluster, one finds that it gives rise to a large number (sometimes 50 or more) branches, "strands", "threads", or "spikes", to which the flowers (which later become the dates) are attached,¹⁴ ranged one after another. These strands are called (1) *šimrāh*, a word of Aramaic origin, meaning pendent; and the most general and correct name. (2) *itkāl*, from عثكل = to hang down; though this name is also applied, as at al-Baṣrah, to the entire cluster. The first letter is sometimes ʾ instead of ع; and Abū Ḥanīfah endeavors to make the distinction that a strand bearing *flowers* is an *utkāl*, whereas if it bears dates it is an *itkāl*. (3) *bint al-urjūn*, "daughter of the spadix". (4) *urjūn*, see VI. 9, *supra*. (5) *miṭw*, = companion, مطا = to join a friend; because

¹³ The root meaning of "assembled" or "united" is easily seen in the terminal bud, where the bases of the leaves are joined in a circle. The use of *gummār* to mean terminal bud is well-nigh universal, both in classical and modern Arabic: only in 'Omān have I heard anything else. There the name is *qimmaḥ*, which regularly means the top of the head, the summit of a mountain, etc.

¹⁴ After the *šimrāh* has been stripped of its flowers, or dates, it is called a *tarīk*, abandoned.

of the large number of similar threads together. (6) *kināb*, كنب = to contain something. (7) *ās*, عسا = to become hard or tough. The three names last mentioned are, so far as my experience goes, purely lexicological. (8) *habbah* — or something which sounded like that — in 'Omān: I neglected to get it spelled. I suspect that it may be connected with *ḥabb* = a grain, etc. (9) *shoa shoa*, in Egypt, and more especially in Nubia, according to T. W. Brown: I cannot even make a guess at this. If it is Arabic it must have been corrupted by Nubians.

IX. Ranged along the strands, *šamārīḥ*, are the individual flowers, called (1) *ḡummaḥ*, from the root *ḡamm* = to become abundant. Variants of this are *ḡumbah*, *ḡunbah*, and possibly *ḡūm*, although the last-named is also explained as Pers. = a vessel. (2) *zirr*, = a bud, etc. (3) *qahf*, = skull, because of the shape and general appearance, to a slightly imaginative eye. (4) At Biskra, *qīṭmīrah*; but this is an incorrect usage, the word applying rather to the calyx of a flower and, most correctly, to the membrane which surrounds the seed of a mature date, which is a proverbial simile for a valueless thing.¹⁵

X. So far, only the inflorescence of the female or fruit-bearing palm has been considered. The inflorescence of the male or pollen-bearing palm is similar in general outlines. When it is still enclosed in its spathe, it is called (1) *saff*, = much interlaced, because the flowers are compressed so tightly together. (2) *šīr'af*, from شرع with suffix ف, = to extend; (3) *kušš*, Pers., *vide supra*. (4) *anbār-i-naḥl*, Pers., granary of the palm. (5) *urḡūn*, *vide supra*. (6) in Egypt, *kūz*, = a pot.

XI. The branches, threads, or strands of the male inflorescence are (1) *aṭīl*, that which increases the size of a body: this is the classical term. (2) *ḡuṣnah*, a branch, from *ḡuṣn* = to pull off. (3) At al-Baṣrah *liḡaḥ* (لغح), according to Major Crow.

XII. The flowers of the male palm are cut and dried indoors

¹⁵ Cf. Koran 35. 14, where the heathen gods are depreciated by this figure of speech. *Qīṭmīr* has been used for at least three different things: (1) the membrane around the seed; (2) the ventral channel of the seed, *naqīr*, in modern Egypt *nuqtah*; (3) the germ-pore of the seed, *fūfah*.—Dr. Schweinfurth notes that in Egypt the name "*gullāfa*" (see II. 8, above) is also given to this membrane.

for a day or longer. When the female inflorescence splits open, it is pollinated. This operation is called (1) *laqqah* or *talqih*, from *lqh* = to become pregnant. Count Landberg notes that in the Ḥadhramaut this word is used of the camel, and of the camel only, among animals. A *hadīṭ* cited by al-Suyūṭī comments on the likeness of the date palm to the human species, in that it is (allegedly) the only plant which copulates لقي. (2) *aḥṭar*, presumably connected with حثر = seeds. (3) *naw-waq*, originally = to separate the fat from the meat; thence, to do anything neatly. (4) *'affar*, to throw dust, see I. 2. (5) *tawbīr*, the root meaning of which relates to wool or hair, whence is derived the idea of making anything grow or increase like abundant hair. (6) *ḡabāb*, from a root which means to extirpate anything, especially the testicles. (7) *abbar*, see I. 2; or perhaps a dial. form of وبر, see (5) above. (8) *tadkīr*, see I. 1; this is the current name in the Hijāz (according to R. F. Burton) and in Egypt. (9) *taṭlīq*, from طلق = to release. A derived meaning of the root applies to parturition in women. Lane indicates that *ṭlq* applies particularly to the pollination of a *tall* palm. (10) *fahḥat*, a corruption of *fahḥad* = sexual intercourse. The Ḥadhramaut name; C. Landberg says that *qht*, given by dictionaries as synonymous, is merely a misprint of this. (11) *sammad*, which may be related to *samād*, fertilizer; it is also given as شمد, which must be either a misprint of copyists, or a dialectal variant; and سمد which, if not another dialectal variant, can be referred to *samīd*, white flour, to which the pollen is comparable. (12) *anbār dāden*, *conferre plenitudinem*, on the Persian side of the Gulf, *teste* Kaempffer. (13) *ṭa'm*, which may be interpreted as "to satisfy the hunger" for food, or sexual intercourse, etc.

XIII. The season of pollination, February to May, depending on climate and variety of palm, is known as the (1) *waqt al-faḥṭah*, (2) *zamān al-ḡabāb*, (3) *tarīḥ al-ṭa'm* and so on.

XIV. The man who performs the operation is called (1) *laqqah*, or *mulaqqah*; this is the classical designation. (2) *naḥ-wālī*, a vulgar word for the classical *naḥḥāl*; or by the proper nominal form of one of the other names applied to pollination.

XV. The process of pollination¹⁶ is, in outline, as follows.

¹⁶ At al-Koton in the Ḥadhramaut, Th. Bent heard the pollinator

First, if the female spathe has not yet split open, but looks as if it were about ready to do so, the operator cuts it open; (1) *qaṣṣ*, onomatopoeic, cf. French *casser*. (2) *maqṣ*, = to open vertically.

XVI. Then he shakes over the female flowers a piece or branch (*guṣnah*) of the male inflorescence, often tying it among them.¹⁷ Thus it continues to liberate pollen for several days. This pollen, cream-colored and finer than dust, is called (1) *ṭahīn* or *ṭihn*, = flour, milled. (2) *daqīq*, = very fine or small. (3) *ḡubār*, = dust. The three foregoing are post-classical. (4) *ḥurq*, = milled; but apparently of Aramaic origin <*ḥraq* = to enter by small cracks. (5) *kušš*, Pers., *vide supra*. (6) *ātā*, a word used in Sindh and said to = flour or fine dust; perhaps a corruption of *ʾaṭa* = a benefit. (7) *laql*, referring to the fecundating property of the pollen. (8) *wazīm*, from *وزم* = to tie up in parcels, or to add a little to a little.

XVII. If the operation has been skilfully performed, and other conditions (e. g., absence of rain or frost) are favorable, the palm remains fecundated; (1) *ḥatīr*; (2) *munawwag*; (3) *iltaqqah*; and so on.

XVIII. But the pollen may have been applied too soon: (1) *basr*, originally meaning, to do anything rapidly; before the female flowers were open to receive the pollen.

XIX. Or for some other reason, e. g., rainy weather, or sterility of the pollen used,¹⁸ the palm remains unfecundated: (1) *ḥāl*, also said of a camel which has been unsuccessfully served by the male; the root means to change or alter. It

exclaim, "May Allah make you grow and be fruitful", as he pollinated the inflorescence. I have read of something of the kind in Morocco, but in general this operation is carried out nowadays without even a bismillah.

¹⁷ Count Landberg, whose account of pollination is the most accurate of any I have seen in philological writings, says that in the Ḥadhramaut the pollinator *rub*s the male flower over the females (*يمسح به*). I have not known this to be done elsewhere, and suspect that, as the Arab verb implies, the rubbing amounts to no more than "combing" the branchlets lightly.

¹⁸ In Egypt, a male which produces little pollen, or pollen of no value, is said by Mr. Brown to be called "*dakar ḥunta*", from *خنث* = effeminate, impotent; or "*dakar farat*", which may be referred to *فرت* = soft, weak.

likewise applies to a palm which bears fruit only in alternate years; and this use probably explains the derivation of the meaning first-mentioned. (2) *dayyah*, = masculine? (3) *šiš*, see next paragraph. (4) *miġlah*, = sterile, from *ġlh* = to become bald. (5) *ġildah*, = patient. The last two on the authority of Abū Hanīfah.

XX. If the female flowers are not pollinated, or not pollinated successfully, they continue to develop, nevertheless, and produce three imperfect, seedless dates on one stem, in place of the usual single, well-formed and seeded berry.¹⁹ Such a worthless date is called (1) in some parts of Egypt *faṣṣ*, the root meaning of which is to separate. (2) *šiš*, the most usual word,²⁰ and found in a variety of spellings which ring all the changes on *شئ* and *شي*. Arabic lexicologists ascribe this to a Pers. word *kikā*; Lane notes that Fraenkel attributed it to Aramaic. (3) *barūk*, at Assiut. This derivation of *brk* is not clear to me. A possible parallel is mentioned by the Qamūs: *barūk* = a woman who marries, having a big son. (4) *ḥaṣī*, = a eunuch: in the Tūāt oases *ḥesyān*, which is, or ought to be, the plural of the foregoing. It is there explained, however, as from *ḥas* = to be unsalable. (5) *balah*, at Biskra: but incorrectly, for this classical word properly designates a normal date, but one not wholly ripe. In modern Egypt and Syria it signifies any ripe date, being the equivalent of the classical *tamr*. (6) *mīl*, on the authority of the Qamūs; but of unknown origin. (7) *salang* (Pers.?) at Baḥrain, *teste* Th. Bent. (8) *suḥḥalah*, at al-Madinah, according to the lexicographers, from a root meaning weak or inferior. (9) *munmiq*, from *nimq* = to strike the eye, the seedless cavity²¹ apparently being likened to an eye that has been "poked out". (10) *fāḥir*, which from its root (= splendid, etc.) would seem to be the contribution of some one with more of a sense of humor than the ordinary Arab lexicographer.

XXI. But if pollination is successful, the fruit "sets" and

¹⁹ In the normal process of development of a pollinated flower, two of its three carpels are aborted, leaving one to attain to maturity.

²⁰ But not confined to dates alone, for 'Abd al-Rizzāq al-Ġazairī, in his *Revelation of Enigmas*, speaks of a seedless colocynth as *šiš*.

²¹ More exactly, the cavity contains a thin, soft, undeveloped seed. The seeds of these *šiš* dates are described as عكوز عقوق, etc.

the dates develop to maturity, which involves a copious vocabulary, as is evident to one who opens an Arabic dictionary at random.

XXII. On the other hand, if the female palm bears no flowers at all, one says (1) *istafḥal*, i. e., it is like a male.

XXIII. As the fruit-cluster develops, the remains of its natal spathe or envelope (*kafūr*) become dry, but hang indefinitely on the palm and are called (1) *ṣawah*, from a root meaning to dry out; or in Algeria (2) *tergiša*, < *rqš*? = spotted with black and white.